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REPORT
on
SAMPLING AND ANALYSIS
OF CONTENTS OF
DRUMS SUSPECTED TO CONTAIN
HAZARDOUS WASTES
at
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, R.I.

January 27, 1984

Prepared for:

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Comm. No. 502-10

A/E Contract No. N62472-83-C-1154

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A. INTRODUCTION

This report presents the details of the sampling and analysis of the contents of 14 drums suspected to contain hazardous wastes at the Naval Education and Training Center (NETC), Newport, Rhode Island. These drums and the wastes contained in them came from preliminary remedial action taken by NETC to reduce potential hazards due to former waste disposal practices. These drums were numbered consecutively from 1 to 14 for identification purposes; these numbers are used in this report.

The work described herein was carried out under A/E Contract No. N62472-83-C-1154 by Loureiro Engineering Associates of Avon, CT; laboratory analyses and other support were provided by York Wastewater Consultants of Stamford, CT.

B. SAMPLES COLLECTED

The following tabulation presents a list of all samples collected.

SAMPLES COLLECTED FROM
DRUMS SUSPECTED TO CONTAIN HAZARDOUS WASTE

NO.	DRUM NUMBER	TIME	COLL
		11-30-83	
8785	08	2:00 P.M.	JL
8786	06	2:30	JL
8787	01	2:45	JL
8788	07	3:00	JL
8789	12	3:15	JB
8790	05	3:00	JL
8791	04	3:00	JL
8792	14	3:00	JL
8793	09	3:30	JL
8794	13	3:15	JB
8795	02	3:30	JB
8796	11	3:45	CJ
8797	03	4:00	JB
8798	10	4:00	CJ

COLL.: JL - Jeffrey Loureiro
JB - John Bennett
CJ - Charles Jaworski

C. DRUM SAMPLING METHODS

Drums were sampled by use of clear glass tubes (1/2 inch diameter) slowly inserted to the bottom of the drum. The upper end of the tube was plugged and the column of liquid transferred to a sample container. In several drums, the viscosity of the liquid was so high that no significant quantity of waste entered the sample tube; in these cases, the material was scraped off the outside of the sample tube into the sample container. One drum of material suspected to be caustic solution was sampled by manually homogenizing a portion of the material (about 3 inches thick on the bottom of the drum) and dipping the mixture into a sample container. The samples were collected in one-liter wide-mouth glass bottles with Teflon-lined screw caps. No preservatives were used but the samples were stored at 4°C.

D. LABORATORY ANALYSES

The results of the laboratory analyses are shown in the laboratory report in the Appendix. The analyses performed were selected on the basis of guidance received in conversations with Mr. John Leo of the Rhode Island Department of Environmental Management (DEM). His suggestions were followed but he stressed that they applied only to data required for a shipping manifest and might not include all information needed for final disposal at a RCRA permitted facility. The operator of the disposal facility might require more data but this can be determined only by contacting the disposal firm directly. Since competitive bidding will be employed to select a disposal firm, this question cannot be fully resolved at this time and additional analyses may be required later, although Mr. Leo indicated that this would be unlikely, based on his experience. The suggested procedure included the following preliminary screening:

1. Analyses to be performed on all drums:

   pH (if pH is high, run cyanide and sulfide)
   Specific gravity
   Flash point
   General appearance
   Odor
   Color
   Consistency

2. Analysis to be performed on groups of no more than five oil samples composited together:

   PCB using ECD or Halcel equipment

If the PCB exceeds 50 mg/l, the group of drums is presumed to be PCB-contaminated and no further analysis is needed; however, if it is known or suspected that a drum actually contains PCB, the sample should be analyzed separately.

Based on the preliminary screening, Mr. Leo suggested that the samples be composited in groups of no more than five drums with contents having similar characteristics:

1. All oily composite samples to be examined for:

   PCB
   VOC screen
   % chlorine
   Lead
   BTU value
   pH
   Flash point
   Specific Gravity

2. The caustic or lye sample (Drum No. 11) to be examined for:

   pH
   Flash point
   Cyanide
   Sulfide
   Sodium
   EP toxicity
   Moisture content
   Specific gravity

3. All water-based composite samples to be examined for:

   pH (if pH is high, run cyanide and sulfide or report average value calculated from preliminary screening)
   Flash point
   Specific gravity
   EP toxicity

E. DISCUSSION OF RESULTS

The results of the sampling and analysis program indicate that the contents of the drums can be separated into groups as follows:

Definitive Characteristics	Drum Numbers
PCB concentration greater than 50 mg/l	4, 7, 14
*Type 3C hazardous waste (slightly flammable waste) with flash points between 100 and 200°F	3, 6, 8, 12
*Type 4 hazardous waste (corrosive waste) with pH greater than 12	11
No known hazardous waste constituent and none detected in this program	1, 2, 5, 9, 10, 13

*Refer to Rhode Island Hazardous Waste Rules and Regulations (see Appendix)

It is possible that drums containing oily materials with no detected or known hazardous constituents (Nos. 1, 2, 5, 9 and 10) might be construed to contain Type 9 hazardous waste (Hazardous N.O.S. - Not Otherwise Specified) because of the way this is defined under the Rhode Island regulations (see Appendix). Under federal regulation 40 CFR 261, the contents of these drums would not be considered hazardous. Also, it should be noted that under federal regulations, the contents of Drum Nos. 6 and 8 are not defined as ignitable (flash point greater than 140°F) whereas they are defined as hazardous under Rhode Island regulations.

The principal purpose of the composite samples was to reduce the cost of volatile organic screening. No volatile organics were detected in any of the nine samples examined for these constituents.

APPENDIX

LABORATORY ANALYSES

RHODE ISLAND HAZARDOUS WASTE RULES AND REGULATIONS (Definitions Only)

January 20, 1984

01-6191-00
LOUREIRO ENGINEERING ASSOCIATES
10 Tower Lane
Avon Park South
Avon, Connecticut 06001

Attention: Mr. Charles A. Jaworski, P.E.

PURPOSE AND RESULTS

Fourteen (14) samples taken from drums stored at the Naval Education and Training Center in Newport, Rhode Island were submitted to York Laboratories for characterization. The samples were prepared and analyzed in accordance with "Test Methods for Evaluating Solid Waste Physical/Chemical Methods," US EPA, May 1980.

The samples were screened and composited into groups according to like characteristics.

The result of the screening and analysis are on the following tables.

Prepared by: Daniel F. Ott
Daniel F. Ott
Manager

Approved by: Jeffrey C. Curran
Jeffrey C. Curran
Chief Chemist

Reviewed by: Robert Q. Bradley
Robert Q. Bradley
Vice President

YORK Laboratories

Table 1.0

LOUREIRO ENGINEERING ASSO.
01-6191-00
Preliminary Screening of Drum Samples

Drum	pH	Specific Gravity at 60°F	Flash[1] Point, °F	Appearance	Odor	Color	PCB's, ppm
1	7.33	0.8498	>200	liquid/oil	oil	brown	8
2	7.18	0.8632	>200	liquid/oil	oil	brown	4
3	7.29	1.320	134	asphalt sludge	asphalt	black	<1
4	7.35	0.8645	>200	liquid/oil	oil	brown	107
5	7.20	0.8511	>200	liquid/oil	oil	yellow	10
6	7.20	0.8490	191	liquid/oil	oil	brown	26
7	7.48	0.8495	*	liquid/oil	oil	brown	151
8	7.32	0.8490	188	liquid/oil	oil	brown	9
9	7.37	0.8637	>200	liquid/oil	oil	brown	12
10	7.11	0.8629	>200	liquid/oil	oil	brown	42
11	12.96	1.830	>200	liquid/solid	caustic	brown	--
12	7.18	0.8635	127	liquid/oil	oil	brown	<1
13	7.37	1.030	>200	liquid/water	none	brown	--
14	7.09	0.8488	*	liquid/oil	oil	orange	2,523

*Flashpoint not run because PCB concentration >50 ppm.
[1]T.C.C.

Table 2.0
LOUREIRO ENGINEERING ASSOCIATES
01-6191-00
Analysis of Oil Samples and Composites

Parameter	Drum Composite 1, 5, 6, 8	Drum Composite 2, 9, 10, 12	Drum 3
PCB, ppm	15	10	<1
Volatile Organic Screening	None Detected	None Detected	None Detected
Chlorine, %	0.05	0.04	0.06
Lead, ppm	<1	<1	<1
BTU/lb	17,618	18,854	16,952
pH	7.27	7.20	7.29
Flash Point, T.C.C.	>200°F	193	134
Specific Gravity at 60°F	0.8497	0.8640	1.320

Drum #4, 7, and 14 were not analyzed, PCB concentration >50 ppm each, as Table 1.0.

YORK Laboratories

Table 3.0
LOUREIRO ENGINEERING ASSOCIATES
01-6191-00
Analysis of Drums, Caustic and Water Based Samples

	Drum #11 Caustic Sample	Drum #13 Water Based Sample	
pH	12.96	7.37	
Flash Point, °F, T.C.C.	>200	>200	
Cyanide, mg/l	<0.005	<0.005	
Sulfide, mg/l	<1.0	<1.0	
Specific Gravity at 60°F	1.830	1.030	
% Moisture	18.8	---	Maximum Concentration Contaminants For Characteristic of EP Toxicity
Sodium	31% by weight as received	---	
E.P. Toxicity			
Silver, mg/l	<0.2	<0.2	5.0
Arsenic, mg/l	<0.8	<0.8	5.0
Cadmium, mg/l	0.69	0.05	1.0
Chromium mg/l	0.15	<0.10	5.0
Lead, mg/l	<0.2	<0.2	5.0
Selenium, mg/l	<0.5	<0.5	1.0
Barium, mg/l	<0.5	<0.5	100.0
Mercury, mg/l	<0.02	<0.02	0.20
Endrin, mg/l	<0.002	<0.002	0.02
Lindane, mg/l	<0.04	<0.04	0.4
Methoxychlor, mg/l	<1.0	<1.0	10.0
Toxaphene, mg/l	<0.05	<0.05	0.5
2, 4-D, mg/l	<1.0	<1.0	10.0
2, 4, 5-TP Silvex, mg/l	<0.10	<0.10	1.0

RHODE ISLAND HAZARDOUS WASTE RULES AND REGULATIONS

(Department of Environmental Management, Division of Land Resources and of Air and Hazardous Materials; Effective December 20, 1979; as amended through September 16, 1982)

Hazardous Waste Management
Facility Operating Permit
Rules and Regulations
Landfills

1. Permit Requirements

1.01 No person shall dispose of hazardous wastes in or on the land or waters of the state unless such person shall first have obtained a Hazardous Waste Management Facility Operating Permit from the director. However, this rule shall not apply to sewage sludge being produced at publicly-owned treatment works, and which is disposed of in accordance with a plan approved by the Department. This rule shall also not apply to animal waste produced at farms when this waste is disposed of on land.

1.02 Hazardous Waste Management Facility Operating Permits may be obtained from the director, after public hearing, by providing him with plans, specifications and other information he may require which will afford him affirmative evidence that the facility for which the application is being made will be in compliance with these rules and regulations and others that may be lawfully prescribed under Chapter 23-46.2 of the General Laws of Rhode Island, 1956, as amended.

2. Definitions. Whenever used in the regulations, the following terms shall have the following meanings:

2.01 "Active portion" shall mean any portion of a hazardous waste management facility which is being used or has been used in the past to unload, store or dispose of hazardous waste.

2.02 "Coastal high hazard area" shall mean the area subject to high velocity waters, including, but not limited to, hurricane wave wash or tsunamis as designated on Flood Insurance Rate Maps (FIRM) as Zone VI-30.

2.03 "Community water system" shall mean a system for the provision to the public of piped water for human consumption which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

2.04 "Department" shall mean the Rhode Island Department of Environmental Management.

2.05 "Direct recharge area" shall mean any area in which precipitation percolates to the water table and flows through subsurface materials to a specified area of discharge. The specified area of discharge may be a reach of a stream, a spring, a well or a well field.

2.06 "Director" shall mean the director of the Rhode Island Department of Environmental Management or his designee.

2.07 "Disposal" shall mean the discharge, deposit, injection, dumping, spilling, leaking or placing of any hazardous waste into or on any land or water or incineration of any hazardous waste.

2.08 "Endangerment" shall mean the introduction of a substance into ground water so as to cause the maximum allowance contaminant levels established in the National Primary Drinking Water Standards or the standards contained in the Public Drinking Water Regulations of the Rhode Island Department of Health to be exceeded in the ground waters or require additional treatment of the ground water in order not to exceed the maximum contaminant levels established in any promulgated National Primary Drinking Water Standard or the standards contained in the Public Drinking Water Regulations of the Rhode Island Department of Health.

2.09 "Existing hazardous waste disposal facility" shall mean any facility used for the disposal of hazardous waste, the operators of which has reported to the Department of Health the existence of such a facility as an industrial waste disposal site or waste oil disposal site as required by Rule 2.07.1 of the Emergency Rules And Regulations Establishing Minimum Standards For Industrial Waste Disposal Sites And Waste Oil Disposal Sites filed by the Department of Health with the Secretary of State on 23 December 1977.

2.10 "Extremely hazardous waste" shall mean any hazardous waste or mixture of hazardous wastes which, in the opinion of the director, if human exposure should occur, may likely result in death, disabling personal injury or illness because of the quantity, concentration or chemical characteristics of the hazardous waste or mixture of hazardous wastes.

The director, through the rule-making process of the Administrative Procedures

Act (Chapter 42-35 of the General Laws of Rhode Island, 1956, as amended) may:

(a) designate certain wastes as extremely hazardous wastes because of their quantity or concentration and toxic, reactive, flammable, corrosive, infectious, radioactive, irritant and strong sensitizer characteristics and their likelihood of causing death, personal injury or illness upon exposure to human beings and

(b) prohibit the disposal of any such extremely hazardous waste in Rhode Island if there exist in the state no hazardous waste disposal facilities capable of disposing of such extremely hazardous wastes without creating a danger to the environment or public health or safety. Such wastes shall be treated or used so as not to present a hazard to the public health and safety or the environment.

2.11 "Generator" shall mean an individual, firm, partnership, association, private or municipal corporation, and state or federal government that produces hazardous waste or imports hazardous waste from a foreign country

2.12 "Hazardous waste" shall mean any waste or combination of wastes of a solid, liquid, contained gaseous, or semi-solid form which because of its quantity, concentration, or physical, chemical, or infectious characteristics may —

(a) cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or

(b) pose a substantial present or potential hazard to human health or the environment.

Such wastes include, but are not limited to, those which are toxic, corrosive, flammable, irritants, strong sensitizers, substances which are assimilated or concentrated in and are detrimental to tissue, or which generate pressure through decomposition or chemical reaction.

2.13 "Hazardous waste disposal facility" shall mean real and personal property acquired, constructed or operated for the purpose of the disposal of hazardous waste.

2.14 "Hazardous waste types" shall include but not be limited to: Type 1A - Highly Toxic; Type 1B - Moderately Toxic; Type 1C - Slightly Toxic; Type 2A - Highly Reactive; Type 2B — Moderately Reactive; Type 2C - Slightly Reactive; Type 3A — Highly Flammable; Type 3B - Moderately Flammable; Type 3C - Slightly Flammable; Type 4 - Corrosive; Type 5 - Infectious; Type 6 - Radioactive; Type 7A - Highly Irritating; Type 7B - Moderately Irritating; Type 7C - Slightly Irritating; Type 8 - Strong Sensitizer; and Type 9 - Hazardous, N.O.S. (Not Otherwise Specified).

2.15 "Incompatible wastes or materials" shall mean wastes or materials which when in contact with each other could result in explosion, fire, violent reaction, creation of an extremely hazardous waste or a hazard to the environment or the health and safety of the public or employees of the facility.

2.16 "Injection well" shall mean a well or system of wells used for the disposal of hazardous waste by pumping the waste into deep wells where they are contained in the pores of permeable subsurface soil.

2.17 "Liquid" shall mean any waste that expresses as separable liquid by weight thirty percent (30%) or more of the waste when exposed to a vacuum of 3/4 atmosphere for thirty (30) minutes.

2.18 "Load" shall mean a mass or weight of a particular hazardous waste contained in one or more transporting container(s).

2.19 "Manifest" shall mean the form provided or approved by the Rhode Island Department of Environmental Management for identifying, but not limited to, the quantity, composition, type and the origin, routing and destination of hazardous waste from the point of generation, including designated storage sites, to the point of disposal or treatment.

2.20 "Operator" shall mean any authorized individual responsible for the control of a hazardous waste disposal facility.

2.21 "Person" shall mean an individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, state, municipality, commission, political subdivision of a state or any interstate body.

2.22 "Publicly owned treatment works" shall mean a treatment works as defined by Section 212 of Public Law 92-500, "Federal Water Pollution Control Act" and which is owned by a state or municipality as defined by Section 502(4) of this same law.

2.23 "Sole source aquifer" shall mean those aquifers designated pursuant to Section 1424(e) of the Safe Drinking Water Act of 1974 (Public Law 93-523) which solely or principally supply drinking water to a large percentage of a populated area.

2.24 "Septage" shall mean any solid, liquid or semi-solid removed from septic tanks, cesspools, privies, domestic wastewater holding tanks or other similar individual sewage disposal systems.

2.25 "Type 1A - Highly Toxic Waste" shall mean a waste which meets any of the following criteria:

(a) The elutriate obtained by applying the Toxicant Extraction Procedure (see Appendix 7) to a representative sample of the waste has any of the following properties as calculated using a recognized reference or where a recognized reference is not available as actually measured:

1. An acute oral LD_{50} in the rat of 0 to 50 mg/kg of body weight determined according to the protocol in Appendix 4; or

2. An acute LC_{50} in bluegills less than 0.1 ppm, according to the protocol in Appendix 2; or

3. A quantitative analysis of the elutriate reveals that it contains a concentration of any substance for which an EPA Primary Drinking Water Standard has been established, equal to or greater than 10 times that standard except that the standards for Fluoride, Nitrate, Radium, Gross Alpha, Gross Beta, Turbidity and Coliform Bacteria will not be applicable under this rule; or

(b) An octanol/water partition coefficient (P) with log P greater than 3.0, according to the protocol in Appendix 3; or

(c) Contains as a component any chemical which has been designated as a carcinogen, a suspect carcinogen, mutagen, or teratogen in regulatory rulemaking by any of the federal agencies (OSHA, EPA, FDA or CPSC) at or above the levels designated by the agency; or

(d) A quantitative analysis of a liquid waste reveals that it contains a substance which in the concentration present in the waste causes the the waste to have a "waste LD_{50} (calculated)" of 50 mg/kg or less, as listed in a reference source approved by the director.

2.26 "Type 1B - Moderately Toxic Waste" shall mean a waste which meets one of the following criteria:

(a) The elutriate obtained by applying the Toxicant Extraction Procedure (see Appendix 7) to a representative sample of the waste has any of the following properties as measured and/or calculated from a reference source approved by the director.

1. An acute oral LD_{50} in the rat greater than 50 but less than 500 mg/kg of body weight as determined according to the protocol in Appendix 4;

2 An acute LC_{50} in bluegills of less than 1 ppm but greater than 0.1 ppm (see Appendix 2)

(b) A quantitative analysis of the waste reveals that it contains a substance which in the concentration present in the waste causes the waste to have a "waste LD_{50} (calculated)" of greater than 50 mg/kg but less than 500 mg/kg of body weight as listed in a reference source approved by the director

2.27 "Type 1C - Slightly Toxic Waste" shall mean a waste which meets one of the following criteria:

(a) The elutriate obtained by applying the Toxicant Extraction Procedure (see Appendix 7) to a representative sample of the waste has any of the following properties as measured and/or calculated from a reference source approved by the director.

1. An acute oral LD_{50} in the rat greater than 500 but less than 5,000 mg/kg body weight as determined according to the protocol in Appendix 4; or

2. An acute LC_{50} in bluegills greater than 1 ppm but less than 10 ppm (see Appendix 2).

(b) A quantitative analysis of the waste reveals that it contains a substance which in the concentration present in the waste causes the waste to have a "waste LD_{50} (calculated)" of greater than 500 but less than 5,000 mg/kg body weight as listed in a reference source approved by the director.

2.28 "Type 2A - Highly Reactive Waste" shall mean a waste which in itself is readily capable of initiating a detonation, or of explosive decomposition, or of reaction at normal temperatures and pressures, or which react explosively with water.

2.29 "Type 2B - Moderately Reactive Waste" shall mean a waste which in itself is capable of initiating a detonation or explosive reaction, but requires a strong initiating source, or which must be heated under confinement before initiation, or which may react violently with water or oxidizable materials or which may form potentially explosive mixures with water or oxidizable materials, or which may generate toxic fumes such as cyanide and sulfide bearing wastes.

2.30 "Type 2C - Slightly Reactive Waste" shall mean a waste which in itself or when mixed with water is normally unstable or readily undergoes chemical change, but does not detonate or cause explosive reactions.

2.31 "Type 3A - Highly Flammable Waste" shall mean:

(a) Any liquid or gaseous material which is a liquid while under pressure, having a flash point below 73 degrees F and a boiling point less than 100 degrees F.

(b) Any compressed gas or mixture for which a mixture of 13% or less (by volume) with air forms a flammable mixture, or the flammable range with air is wider than 12% regardless of the lower limit.

2.32 "Type 3B — Moderately Flammable Waste" shall mean:

(a) A liquid having a flash point less than 73 degrees F and a boiling point at or above 100 degrees F, and those having a flash point at or above 73 degrees F and a boiling point less than 100 degrees F, or a liquid that ignites spontaneously in dry or moist air at below 130 degrees F.

(b) Any compressed flammable gas or mixture having in the container an absolute pressure exceeding 40 psi at 70 degrees F, or regardless of the pressure at 70 degrees F, having an absolute pressure exceeding 104 psi at 130 degrees F, or any liquid flammable materials having a vapor pressure exceeding 40 psi absolute at 100 degrees F.

2.33 "Type 3C — Slightly Flammable Waste" shall mean:

(a) Liquids having a flash point above 100 degrees F, but not exceeding 200 degrees F.

(b) Solids and semi-solids which readily give off flammable vapors below 100 degrees F.

2.34 "Type 4 — Corrosive Waste" shall mean a waste which has any of the following properties:

(a) Any aqueous waste having a pH less than or equal to 3.0, or greater than or equal to 12.0 as determined with a pH meter using the protocol specified in the "Manual of Methods for Chemical Analysis of Water and Wastes," EPA-625-16-74 003.

(b) A non-aqueous waste when mixed 50% by weight with distilled water, yields an aqueous portion with a pH less than or equal to 3.0, or greater than or equal to 12.0 as measured with a pH meter using the protocol specified in the "Manual of Methods for Chemical Analysis of Water and Wastes," EPA-625-16-74 003.

(c) A gaseous material such that a 2 molar aqueous solution yields a pH less than or equal to 3.0, or greater than or equal to 12.0 as measured with a pH meter using the protocol specified in the "Manual of Methods for Chemical Analysis of Water and Wastes," EPA-625-16-74 003.

(d) A corrosion rate greater than 0.250 inch per year on steel (SAE 1020) at a test temperature of 130 degrees C as determined by NACE standard TM-01-69.

2.35 "Type 5 — Infectious Waste" shall mean a substance that contains microorganisms or helminths of CDC Classes 2 through 5 of the Etiologic Agents listed in Appendix 1, if generated in quantities over 200 kg/month (440 pounds).

2.36 "Type 6 — Radioactive Waste" shall mean all radioactive wastes except high level radioactive waste. These low level wastes include (1) all solid radioactive materials and (2) any gaseous or liquid raidoactive materials that exceed the maximum permissible concentrations listed in Appendix A, Table II of Part A of the Rhode Island Rules And Regulations For The Control Of Radiation, but do not include radioactive materials specifically exempted in Section C.2 of those same regulations.

High level wastes are wastes resulting from the operation of the first cycle solvent extraction system, or equivalent, and concentrated wastes from subsequent extraction cycles, or equivalent, in a facility for reprocessing of irradiated reactor fuel.

2 37 "Type 7A — Highly Irritating Waste" shall mean a waste which has a mean Draize score of 6.6 to 9.0 (see Appendix 9), or which causes visible destruction or irreversible alterations in human skin tissue at the site of contact as determined by the method in 49CFR 173 240, Appendix D

2 38 "Type 7B — Moderately Irritating Waste" shall mean a waste which has a mean Draize score of 3.1 to 6.5 (see Appendix 9)

2 39 "Type 7C — Slightly Irritating Waste" shall mean waste which has a mean Draize score of 1 6 to 3.0 (see Appendix 9)

2.40 "Type 8 — Strong Sensitizer" shall mean a waste that produces an allergic sensitization in a substantial number of persons who come into contact with it, as determined by an appropriate test (see Appendix 5 and Appendix 6).

2.41 "Type 9 — Hazardous N.O.S." (Not Otherwise Specified) shall mean a waste which may not meet any of the criteria set forth in 2.26 to 2.41 but which may still cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or pose a substantial present or potential hazard to human health or the environment.

2.42 "Waste LD_{50} (calculated)" shall mean the value arrived at by applying to either the elutriate obtained from the Toxicant Extraction Procedure or to a liquid waste the following equation:

$$\frac{1}{\text{Waste } LD_{50}} = \frac{C_1}{(LD_{50})_1} + \frac{C_2}{(LD_{50})_2} + \ldots + \frac{C_n}{(LD_{50})_n}$$

C = The concentration of a substance in a sample of the liquid waste or in the elutriate obtained by applying the Toxicant Extraction Procedure to non-liquid waste.

LD_{50} = Oral, rat LD_{50} listed in a recognized source.

2 43 "Underground drinking water source" shall mean an aquifer supplying drinking water for human consumption; or an aquifer in which the ground water contains less than 10,000 mg/l total dissolved solids, or an aquifer designated as such by the Administrator of the Environmental Protection Agency or any Rhode Island state agency authorized to do so.

2 44 "Waste" shall include but not be limited to materials that are discarded or being handled prior to being discarded or have served their original intent including manufacturing and mining by-products that are being discarded Wastes also include liners and containers of products and intermediates listed in 40 CFR §261 33(e), as is or as shall be amended, and liners and containers of extremely hazardous wastes, unless the container or inner liner has been triple rinsed using a solvent capable of removing the product, intermediate or extremely hazardous waste, or cleaned by another method shown to achieve equivalent removal.

The Director may determine not to consider as a waste, materials which are beneficially used or re-used, or which are legitimately recycled or reclaimed. Such determination shall be made by the Director on a case-by-case basis following written request of the generator of the waste and upon the presentation of full documentation detailing his request, including control methods to be employed to preclude improper disposal of the material. Any such determination by the Director shall apply only to the generator making the request and not to the material in general except that treaters of waste located in Rhode Island may make application for generators located outside of Rhode Island where the states in which the generators are located do not classify the waste as hazardous. Determinations by the Director may be changed at his discretion.

3. General Facility Requirements

3.01 Operating permits will be granted only for those facilities for which the applicant can show, by a preponderence of evidence, will be located, designed, constructed and operated so as to prevent all of the following:

(a) Endangerment of an underground drinking water source beyond the facility boundary.

(b) Endangerment of an aquifer which has been designated by any federal or Rhode Island state agency as a sole source aquifer.

(c) Contamination by discharge by any surface or sub-surface means causing a violation of any rule or regulation or standard of any federal or Rhode Island state agency.

3.02 Operating permits will not be granted to facilities which are to be located or are located in a one hundred year flood plain, a wetland, the direct recharge area of an existing or planned surface or ground water community water system, the direct recharge area of a sole source aquifer or a coastal high hazard area, or an active fault area, critical habitat, or which do not meet any of the following requirements:

(a) Have diversion structures to divert all surface runoff away from the active portions of the facility for the 24-hour, 25-year storm.

(b) Have a means of collection and containing 24-hour, 25-year storm runoff falling on active portions of the facilities.

(c) Have a method of minimizing the contamination of rain water falling on the active portions.

(d) Prohibit open burning of any waste.

(e) Have a six foot, chain-link fence completely surrounding the active portions.

(f) Control each gate or other means of access to the active portions by an attendant or mechanical or electrical device.

(g) Have a sign identifying the site and warning unauthorized persons to keep out.

(h) Prohibit the disposal of liquid waste without providing sufficient absorbent material, of a type approved by the director, in the immediate area of the liquid disposal to prevent the generation of leachate.